

KUDO et al.

Serial No. 10/702,090

Response to the Office Action dated May 16, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended): An electric power supply unit comprising:

a first electric power supply circuit in which an electric current is supplied from a first power supply line;

a second electric power supply circuit in which an electric current is supplied from a second power supply line; and

a controlling device which controls operations of both the first electric power supply circuit and the second electric power supply circuit so as to correlate to each other,

wherein the controlling device controls the operation of the first electric power supply circuit so as to keep its voltage at a predetermined value, and controls the operation of the second electric power supply circuit so as to keep its voltage at approximately a same value as that of the first electric power supply circuit.

Claim 2 (Canceled).

Claim 3 (Currently Amended): The electric power supply unit according to claim 1, further comprising a detection device which detects [[an]] on-off states of the second power supply line,

wherein the controlling device controls the operations of the first electric power supply circuit and the second electric power supply circuit so as to turn the circuits on when the detection device detects an on-status of the second power supply line, and controls the operations of the circuits so as to turn the circuits off when the detection device detects an off-status of the second power supply line.

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Claim 4 (Original): The electric power supply unit according to claim 3, wherein a backflow-inhibiting diode is arranged in the second power supply line, the backflow-inhibiting diode making it possible for the detection device to detect the off-status of the second power supply line.

Claim 5 (Currently Amended): The electric power supply unit according to claim 1, wherein the first electric power supply circuit and the second electric power supply circuit comprise DC-DC converter circuits circuit respectively.

Claim 6 (Original): The electric power supply unit according to claim 1, wherein the first power supply line is a back-up line equipped in a vehicle, and the second power supply line is an accessory line equipped in the vehicle, electric currents are supplied from one battery through the first power supply line and the second power supply line.

Claim 7 (Original): The electric power supply unit according to claim 1, wherein each of the first electric power supply circuit and the second electric power supply circuit functions as a part of an audio equipment.

Claim 8 (Currently Amended): An electric power supply controlling method comprising the processes of:

controlling an operation of a first electric power supply circuit in which an electric current is supplied from a first power supply line so as to keep its voltage at a predetermined value;

controlling an operation of a second electric power supply circuit in which an electric current is supplied from a second power supply line so as to keep its voltage at approximately a same value as that of the first electric power supply circuit;

detecting [[an]] on-off states of the second power supply line;

controlling the operations of the first electric power supply circuit and the second electric power supply circuit so as to turn the circuits on when an on-status of the second power supply line is detected; and

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controlling the operations of the circuits so as to turn the circuits off when an off-status of the second power supply line is detected.

Claim 9 (Currently Amended): An electric power supply controlling method comprising:

a first controlling process of controlling an operation of a first electric power supply circuit in which an electric current is supplied from a first power supply line so as to keep its voltage at a predetermined value;

a second controlling process of controlling an operation of a second electric power supply circuit in which an electric current is supplied from a second power supply line so as to keep its voltage at approximately a same value as that of the first electric power supply circuit;

a detecting process of detecting [[an]] on-off states of the second power supply line;

a third controlling process of controlling the operations of the first electric power supply circuit and the second electric power supply circuit so as to turn the circuits on when an on-status of the second power supply line is detected;

a fourth controlling process of controlling the operations of the circuits so as to turn the circuits off when an off-status of the second power supply line is detected;

a determining process of determining whether or not the first and second control processes are necessary; and

a switching process of switching between the implementation and the termination of the first and second controlling processes in response to a determination result in the determining process.

Claim 10 (New): An electric power supply unit comprising:

a first electric power supply circuit connected to a first power supply line;

a second electric power supply circuit connected to a second power supply line; and

a voltage control circuit comprising:

a first comparator that compares an output voltage of the first electric power supply circuit and a reference voltage value;

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a second comparator that compares the output voltage of the first electric power supply circuit and an output voltage of the second electric power supply circuit;

a first control circuit that controls the output voltage of the first electric power supply circuit to be substantially constant based on an output of the first comparator; and

a second control circuit that controls the output voltage of the second electric power supply circuit to be approximately equal to the output voltage of the first electric power supply circuit based on an output of the second comparator.

Claim 11 (New): The electric power supply unit according to claim 10, wherein the first and second power supply lines are connected to the same battery.

Claim 12 (New): The electric power supply unit according to claim 10, wherein the first and second control circuits comprise respective pulse control circuits.

Claim 13 (New): The electric power supply unit according to claim 10, wherein the first and second electric power supply circuits comprise DC-DC converter circuits.

Claim 14 (New): The electric power supply unit according to claim 10, further comprising:

a first amplifier having a power supply input supplied with the output voltage of the first electric power supply circuit; and

a second amplifier supplied having a power supply input supplied with the output voltage of the second electric power supply circuit.

Claim 15 (New): The electric power supply unit according to claim 14, wherein the first and second electric power supply circuits are turned off if input signals supplied to the first and second amplifiers are less than a specified value.

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Claim 16 (New): The electric power supply unit according to claim 10, further comprising:

a detecting circuit for detecting whether power is supplied to the second power supply line.

Claim 17 (New): The electric power supply unit according to claim 16, further comprising:

a delay inhibiting circuit for inhibiting electric charge from the second electric power supply circuit from flowing into the second power supply line when the detecting circuit detects that no power is supplied to the second power supply line.

Claim 18 (New): An audio amplifier comprising the electric power supply circuit according to claim 10.